

REMARKS

Reconsideration of this application, as presently amended, is respectfully requested. Claims 1-10 are pending in this application. Claims 1-10 stand rejected. The rejections set forth in the Office Action are respectfully traversed below.

Claim Rejections – 35 U.S.C. §103

Claims 1-2 and 5-10 were rejected under 35 U.S.C. §103(a) as being unpatentable over the Applicant's admitted Prior Art in view of **Takahashi et al.** (Japan Publication 64-030261) and **Tanigawa** (Japan Publication 03-227063). Claim 3 was rejected under 35 U.S.C. §103(a) being unpatentable over the Applicant's Admitted Prior Art in view of **Takahashi et al.**, **Tanigawa** and **Murakami** (Japan Publication 10-150179). For the reasons set forth in detail below, these rejections, to the extent they are considered to apply to the amended claims, are respectfully traversed.

Initially, some of the significant aspects of the present invention will be discussed below. The present invention relates to a high speed camera, which is distinct from a normal camera, as explained at [0001] and [0019] of the publication of the present application. Thus, the structure of the imaging device is quite different from that of normal imaging devices. In a high speed imaging device as that of the present invention, the frame rate is very high so that the light receiving time of each light receiving pixel is very short. In contrast, the electrical charge transferring speed in the light transfer path is rather slow. This necessitates the accumulating pixels between a light receiving pixel and a (vertical) transfer path for temporarily storing the

electrical charges produced in the light receiving pixel before they are transferred in the transfer path. Normal imaging devices such as those disclosed in **Takahashi** and **Tanigawa** do not have the accumulating pixels.

Claim 1 has been amended hereby to clarify the above-noted aspects of the present invention. Support for the present amendments to claim 1 is found, e.g., in section [0027] of the publication of the present application and in Fig. 2.

The imaging device of the present invention is, as explained above, used for a high-speed camera. In the high-speed camera, the light receiving time of each pixel is very short, so that the image signal is very vulnerable to noise. Even a small amount of light coming from a source other than the object causes smear noises, and should be eliminated. The opaque cover of the present invention is significantly effective in eliminating the noise light coming from sources other than the object, and assures only light from the object comes into the light receiving pixels.

Neither **Takahashi** nor **Tanigawa** relates to a high-speed imaging device, and neither discloses the claimed accumulating pixels. The introduction of the opaque cover and the eave in the present invention is deeply related to the high-speed imaging device, and their importance is critically different from that of those used, if any, in normal imaging devices.

For the reasons set forth above, it is respectfully submitted that presently amended claim 1 patentably distinguishes over the combination of Applicants' admitted prior art, **Takahashi et al.** and **Tanigawa**. Further, it is submitted that dependent claims 2-10 patentably distinguish over the cited prior art for the same reasons set forth above for claim 1 by virtue of their dependency thereon.

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Art Unit: 2622

Amendment under 37 C.F.R. §1.111
Attorney Docket No.: 011314

CONCLUSION

In view of the foregoing amendments and accompanying remarks, it is submitted that all pending claims are in condition for allowance. A prompt and favorable reconsideration of the rejection and an indication of allowability of all pending claims are earnestly solicited.

If the Examiner believes that there are issues remaining to be resolved in this application, the Examiner is invited to contact the undersigned attorney at the telephone number indicated below to arrange for an interview to expedite and complete prosecution of this case.

If this paper is not timely filed, Applicants respectfully petition for an appropriate extension of time. The fees for such an extension or any other fees that may be due with respect to this paper may be charged to Deposit Account No. 50-2866.

Respectfully submitted,
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